IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Maria Adele Pacciarini et al. **Examiner:** Ganapathy Krishnan

Serial No.: 09/786,998 **Art Unit:** 1623

Filed: June 14, 2001 **Docket:** 17815

For: USE OF METHOXYMORPHOLINO Dated: November 7, 2011

DOXORUBICIN FOR THE TREATMENT

OF A LIVER TUMOR

Confirmation No.: 1122

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R §§1.97 and 1.98, it is requested that the following references, which are also listed on the attached Information Disclosure Citation, be made of record in the above-identified case.

- 1. De Takats P.G. et al., "Phase IB Study of Methoxymorpholinodoxorubicin (PNU152243; FCE 23762) Administered in a 3 or 4 Weekly Schedule", Clinical Pharmacology and Phase I Studies (September 18, 1997), Abstract;
- 2. Quintieri L. et al., "Delivery of Methoxymorpholinyl Doxorubicin by Interleukin 2-Activated NK Cells: Effect in Mice Bearing Hepatic Metastases", British Journal of Cancer 79(7/8):1067-1073 (March 1999):

CERTIFICATE OF ELECTRONIC FILING

I hereby certify that this correspondence is being deposited with the United States Patent & Trademark Office via Electronic Filing through the United States Patent and Trademark Office ebusiness website.

Dated: November 7, 2011

- 3. Vasey P.A. et al., "Phase I Clinical and Pharmacokinetic Study of 3'-Deamino-3'-(2-Methoxy-4-Morpholinyl)Doxorubicin (FCE 23762)", *Cancer Research* 55(10):2090-2096 (May 15, 1995);
- 4. Taub R.N. et al., "Phase II Study of Methoxymorpholinodoxorubicin in Advanced Sarcomas (PNU/S2243 (FCE 23762))", Proceedings of the Annual Meeting of the America Society of Clinical Oncology Vol. 16 (May 17-20, 1997), Abstract;
- 5. Robert J. et al., "Pharmacokinetics and Metabolism of Anthracyclines", *Cancer Surveys* 17:219-252 (1993);
- 6. Rougier P. et al., "Intérêt Des Chimiothérapies Loco-Régionales Par Les Anthracyclines", *Pathologies Biologie 35(1)*:123-128 (1987);
- 7. Kirk S. et al., "Irresectable Hepatoma Treated by Intrahepatic Iodized Oil Doxorubicin Hydrochloride: Initial Results", *Surgery 109(6)*:694-697 (1991);
- 8. Carr B.I. et al., "Prolonged Survival With Chemotherapy Alone for Hepatocellular Carcinoma (HCC) With Intra-Arterial Chemotherapy" *Proceedings of the American Society of Clinical Oncology Vol. 13* (March 1994), Abstract;
- 9. Carr B.I. et al., "Phase II Study of Spherex (Degradable Starch Microspheres) Injected into the Hepatic Artery in Conjunction With Doxorubicin and Cisplatin in the Treatment of Advanced-Stage Hepacellular Carcinoma: Interim Analysis", Seminars in Oncology 24(2), Suppl 6 pp. S6-97-S6-99 (April 1997);
- 10. Lai E.C.S., "Postoperative Adjuvant Chemotherapy After Curative Resection of Hepatocellular Carcinoma: A Randomized Controlled Trial", *Arch. Surg.* 133:183-188 (February 1998);
- 11. Ripamonti M. et al., "*In Vivo* Anti-Tumour Activity of FCE 23762, a Methoxymorpholinyl Derivative of Doxorubicin Active on Doxorubicin-Resistant Tumour Cells", *Br. J. Cancer* 65:703-707 (1992);
- 12. Ripamonti M. et al., "Morpholinylanthracyclines: Cytotoxicity and Antitumor Activity of Differently Modified Derivatives", *Investigational New Drugs* 14:139-146 (1996);
- 13. Capranico G. et al., "Influence of Structural Modifications at the 3' and 4' Positions of Doxorubicin on the Drug Ability to Trap Topoisomerase II and to Overcome Multidrug Resistance", *Molecular Pharmacology* 45:908-915 (1994);

- 14. Winette T.A. et al., "The Role of Methoxymorpholino Anthracycline and Cyanomorpholino Anthracycline in a Sensitive Small-Cell Lung-Cancer Cell Line and its Multidrug-Resistant but P-Glycoprotein-Negative and Cisplatin-Resistant Counterparts", *Cancer Chemother Pharmacol.* 35:345-348 (1995);
- 15. Duran G.E. et al., "Differential Single-Versus Double-Strand DNA Breakage Produced by Doxorubicin and its Morpholinyl Analogues", *Cancer Chemother Pharmacol.* 38:210-216 (1996);
- 16. Geroni C. et al., "L1210 Cells Selected for Resistance to Methoxymorpholinyl Doxorubicin Appear Specifically Resistant to this Class of Morpholinyl Derivatives", *Br. J. Cancer* 69:315-319 (1994);
- 17. Bakker M. et al., "Mechanisms for High Methoxymorpholino Doxorubicin Cytotoxicity in Doxorubicin-Resistant Tumor Cell Lines", *Int. J. Cancer* 73:362-366 (1997);
- 18. Bielack S.S. et al., "Structurally Modified Anthracyclines Retain Activity in a Cell Line With Simultaneous Typical and Atypical Multidrug Resistance", *Anticancer Research* 15:1279-1284 (1995);
- 19. Colleoni et al., "Arterial Chemoembolization With Epirubicin in Unresectable Hepatocellular Carcinoma in Cirrhosis", *Ann. Oncol. Vol. 5(Suppl 8)* (1994), Abstract;
- 20. Lai C.L. et al., "Doxorubicin Versus No Antitumor Therapy in Inoperable Hepatocellular Carcinoma. A Prospective Randomized Trial", *Cancer Vol.* 62(3):479-483 (August 1, 1988), Abstract;
- 21. Shepherd FA et al., "Treatment of Primary Hepatocellular Carcinoma by Hepatic Arterial Infusion of 4'-Epirubicin (Eng.)", *Reg Cancer Treat Vol.* 3(4):197-201 (1990), Abstract;
- 22. Ono T. et al., "Adjuvant Chemotherapy With Epirubicin and Carmofur After Radical Resection of Hepatocellular Carcinoma: A Prospective Randomized Study", *Semin Oncol. Vol. 24(2 Suppl 6)*:S6-18-S6-25 (April 1997), Abstract;
- 23. Wassermann K. et al., "Effects of Morpholinyl Doxorubicins, Doxorubicin, and Actinomycin D on Mammalian DNA Topoisomerases I and II", *Mol. Pharmacol.* 38(1):38-45 (July 1, 1990), Abstract;
- 24. Takayasu Y. et al., "Merits and Demerits of Arterially Administered Large-Dose Anticancer Agent, Lipiodol Emulsion", *Cancer and Chemotherapy 15(8-Part-II)*:2562-2567 (1988);

- 25. English-language machine translation of Russian Patent Application No. RU 2 065 307, published August 20, 1996; and
- 26. International Search Report dated May 3, 2000 received from the European Patent Office from related International Patent Application No. PCT/EP99/06298.

Applicants are submitting a copy of the above-cited references required by 37 C.F.R. § 1.98 (a)(2)(i) and (ii), together with a copy of the International Search Report.

Inasmuch as this Information Disclosure Statement is being submitted in accordance with the schedule set out in 37 C.F.R. §1.97(c), please charge the \$180.00 fee to deposit account no. 19-1013/SSMP.

Respectfully submitted,

Peter I. Bernstein

Registration No. 43,497

Scully, Scott, Murphy & Presser, P.C. 400 Garden City Plaza, Suite 300 Garden City, New York 11530 (516) 742-4343 PIB:dk

INFORMATION D	ISCI OSLIDE CITATION	Atty. Docket No.	T A		
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		17815	Application No. 09/786,998		
		Applicants Maria Adele Pacciarini et al.			
		Filing Date June 14, 2001	Group Art Unit 1623		
OTHER (Including Author, Title, Date, Pertinent Pages, Etc.)					
Ac	De Takats P.G. et al., "Phase IB Study of Methoxymorpholinodoxorubicin (PNU152243; FCE 23762) Administered in a 3 or 4 Weekly Schedule", <i>Clinical Pharmacology and Phase I Studies</i> (September 18, 1997), Abstract				
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(P)	Taub R.N. et al., "Phase II Study of Methoxymorpholinodoxorubicin in Advanced Sarcomas (PNU/S2243 (FCE 23762))", Proceedings of the Annual Meeting of the America Society of Clinical Oncology Vol. 16 (May 17-20, 1997), Abstract				
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International Search Report dated May 3, 2000 received from the European Patent Office from related					
International Patent Application No. PCT/EP99/06298					
EXAMINER	DATE CONSIDERED				
* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in					
conformance and not considered. Include copy of this form with next communication to applicant.					